World Future Energy Summit

Climate Data to Action: Enhancing Clean Energy Resilience and Mitigation with Climate Services

From 12:00 pm to 13:20 pm GST on 13 January 2026

Location: IRENA Pavillion, ADNEC Centre Abu Dhabi

Organizers: IRENA / WMO

Background

The global energy transition is accelerating, but the window to meet the goals of the Paris Agreement and keep the 1.5° C target within reach is closing rapidly. As the United Nations Secretary General reminded us in his address, "A Moment of Opportunity", we are witnessing the dawn of a new energy era, one defined by an unstoppable shift towards clean, secure, and affordable energy. The COP28 UAE Consensus reaffirmed the scale of the challenge: tripling global renewable energy capacity and doubling energy efficiency by 2030 are both aspirational and essential to securing long-term prosperity.

The World Meteorological Organization (WMO) and the International Renewable Energy Agency (IRENA) will present a new joint report "2024 Year in Review" which deepens the understanding of how climate variability and long-term changes are shaping renewable energy resources and electricity demand worldwide. The report demonstrates that climate signals are defining elements in the performance, reliability, and planning of renewable energy systems.

Renewable energy, powered by the atmosphere and hydrosphere - sunlight, wind, and water - continues to play a key role in the global energy transition. In 2024, installed renewable power capacity grew by a record 582 GW to reach 4,443 GW, with solar photovoltaic and wind together providing over two-thirds of this expansion. Yet, as this report underscores, the success of the transition increasingly depends on understanding how climate variability influences both supply and demand.

The year 2024 was the warmest on record, with global average temperatures reaching 1.55 °C above pre-industrial levels. The residual effects of a strong El Niño, record ocean heat, and shifting atmospheric circulation patterns produced significant regional anomalies in wind, solar, and hydropower resources. Southern Africa experienced exceptional gains in solar and wind potential, while hydropower generation in parts of Africa and South America declined under persistent drought conditions. Meanwhile, global energy demand rose sharply - 4% above the long-term average-driven by extreme heat events that amplified cooling needs.

The insights contained in this Year in Review provide governments, regulators, utilities, investors, and financial institutions with actionable knowledge to accelerate the renewable energy transition, while managing the complex risks of a changing climate. They also highlight the urgent need to close data gaps, strengthen observational networks, and develop regional climate services - particularly in regions such as Africa, where renewable potential is vast but remains under utilised.

Objectives

This session will explore how climate-informed renewable energy strategies can enhance clean energy resilience amid growing climate variability. Country representatives and technical experts will identify barriers and share practical lessons that demonstrate how climate information can be translated into actionable energy investment decisions. Finally, the session will look ahead to emerging opportunities for expanding access to climate data, close knowledge gaps, strengthening regional collaboration, and aligning long-term energy planning priorities more closely with national development strategies.

Agenda Overview

12:00-12:10	**Welcome and Opening Remarks** • **Ms. Gauri Singh**, Deputy Director-General, IRENA
12:10-12:25	**Scene-setting presentation When Weather Shapes Power: 2024 Insights on Climate Impacts to Global Energy Systems** • **Mr. Alberto Troccoli,** Co-founder and CEO of Inside Climate Service, Managing Director of the World Energy & Meteorology Council, and Chair of the WMO Study Group on Renewable Energy Transition
12:25-13:05	***Moderated panel discussion on Climate Data to Action: Enhancing Clean Energy Resilience and Mitigation with Climate Services*** ***Dialog guiding questions:*** • *What are the most significant barriers to systematically integrating climate variability into national energy planning and infrastructure design?* • *How can we identify and prepare for compound climate risks that could trigger cascading failures across our energy system?* • *What specific climate and resource data gaps are most hindering investment in RE power generation and resilient energy*

	infrastructure? • *What are national experiences to value and incentivize investments in climate-resilient energy systems?* **Moderator:** • **Mr. Alejandro Longueira,** Senior Principal Energy and Natural Resources, Oliver Wyman **Panel Discussion:** • **Ms. Imen Gherboudj**, Team Lead - RE Resource Assessment, IRENA • **Ms. Daxita Rajcoomar**, Engie Chief Sustainability Officer for AMEA • **Mr. George Partasides**, Energy and Commercial Counsellor GCC Region (tbc) • **Ms. Leslie Smith,** Director, Renewable Energy Division & National Ozone Officer, Ministry of Climate Resilience, the Environment and Renewable Energy, Grenada **Mr. Luciano Caratori,** Energy Cluster Lead, Climate Champions Team **Mr. Meng Dongwei**, Deputy General Manager of Shanghai Electric Group Co., Ltd. (SEGC)
13:05-13:15	**Open Discussion with Questions by the Audience**
13:15-13:20	**Closing Remarks** **H.E. Mr. Nelson Mario De Carvalho Rosa Cardoso**, Minister of Infrastructure, Natural Resources and Environment, São Tomé and Príncipe

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